<110> Dawson, Paul

Bowden, Donald

Fossey Sallyanne

<120> GLUT10 A NOVEL GLUCOSE TRANSPORTER IN THE TYPE 2 DIABETES LINKED
REGION OF CHROMOSOME 20Q12-13.1

<130> 9151.11

<160> 28

<170> PatentIn version 3.0

<210> 1

<211> 4395

<212> DNA

<213> Homo sapiens.

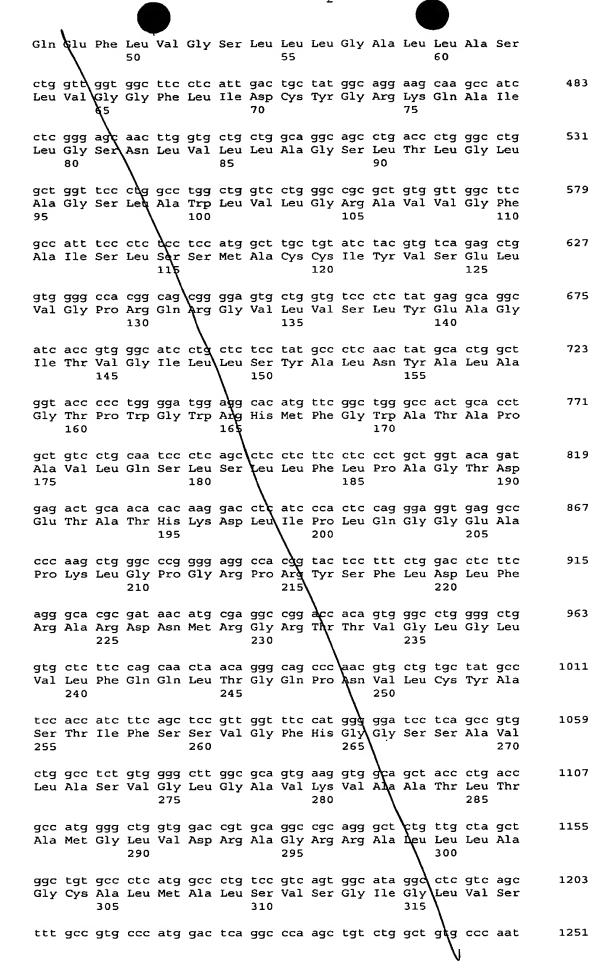
<220>

<221> CDS

<222> (250)..(1875)

<400> 1 gagggggtcc ttgccaggcc tggggcggcc ggggggcc ctgggctccc ctccgtcccg 60 cctccaggcc tcggggcctg gctggccgac gtggcgtttgg cggcgctgcg cgcgggaggg 120 cagggcagga gggacagagg cggggcggg ccggaaagtt tgtccggcgg cagcggcgtt 180 ggggactccg gcgggggatg cgcgccggc ccctcagcac ccccagcacg ccgccgagtc 240 ccgctcgcc atg ggc cac tcc cca cct gtc ctg cct ttg tgt gcc tct gtg
Met Gly His Ser Pro Pro Val Leu Pro Leu Cys Ala Ser Val 291 10 tot tig ctg ggt ggc ctg acc tit ggt tat gaa ctg gca gtc ata tca 339 Ser Leu Leu Gly Gly Leu Thr Phe Gly Tyr Glu Leu Ala Val Ile Ser 15 20 ggt gcc etg ctg cca etg cag ett gac ttt ggg cta age tge ttg gag 387 Gly Ala Leu Leu Pro Leu Gln Leu Asp Phe Gly Leu Ser Cys Leu Glu cag gag ttc ctg gtg ggc agc ctg ctc ctg ggg gct ctd ctc gcc tcc

:110> Dav



Aut 2

Phe	Ala 320	Val	Pro	Met	Asp	Ser 325	Gly	Pro	Ser	Cys	Leu 330	Ala	Val	Pro	Asn	
														cag Gln		1299
														gag Glu 365		1347
														gga Gly		1395
ccc Pro	tca Ser	gcc Ala 385	cct Pro	cct Pro	cgg Arg	ctg Leu	gcc Ala 390	ctg Leu	agc Ser	tct Ser	gcc Ala	ctc Leu 395	cct Pro	ej aaa	ccc Pro	1443
cct Pro	ctg Leu 400	ccc Pro	gct Ala	cgg Arg	gjå aaa	cat His 405	gca Ala	ctg Leu	ctg Leu	cgc Arg	tgg Trp 410	acc Thr	gca Ala	ctg Leu	ctg Leu	1491
														cca Pro		1539
														gga Gly 445		1587
														ttc Phe		1635
_					_							_		tgg Trp		1683
														atc Ile		1731
														gac Asp		1779
cag Gln	ttc Phe	cag Gln	aag Lys	aga Arg 515	cgg Arg	ttc Phe	acc Thr	ctg Leu	agc Ser 520	ttt Phe	ggc	cac His	agg Arg	cag Gln 525	aac Asn	1827
tcc Ser	act Thr	ggc	atc Ile 530	ccg Pro	tac Tyr	agc Ser	cgc Arg	atc Ile 535	gag Glu	atc Ile	tct Ser	gcg Ala	gcc Ala 540	tcc Ser	tga	1875
gga	atcc	gtc 1	tgcc	.gga	at to	ctgga	aact	g tgg	gcttt	tggc	agad	cat	erk (cagca	atcctg	1935
ctt	ccta	ggc (ccca	gagc	ac aa	agtt	ccag	e tg	gtett	tttg	ggag	gtgg	ccc	ctgc	ccccaa	1995
agg	tggt	ttg (ettt	tgct	39 99	gtaaa	aaag	gato	gaaag	gttt	gaga	aatgo	ccc a	adtto	cttcat	2055
ttt	gggt	ttc a	aggc	cctg	aa g	gttc	ttgag	g gai	ctag	gttt	cat	gcct	cgg	***	ccatt	2115
gac	ttgg	aca 1	tttt	tgca	gt ti	ttta	taaga	a aga	aatat	ttct	atga	aagto	ctt	tgtt	cccca	2175
tgg	attt	ttt 1	tcaa	agaa	tc to	cagg	ggta	c caa	atcc	gggc	agga	aggti	ttt 1	taca	galtato	2235
acc	ccta	aat (ccaa	atga	gg at	tatca	atcti	t tt	ctaat	tctc	ttt	ttca	aac	tggc	rgg g ac	2295

July Con

aAttteggaa gggggaagte tettttttta etettateat titttitttt tgaggtggag 2355 tctdattctg ttgcccaggc tggcctgatc ttggctcact gcaacctcca cttcctgggt 2415 tcaag@gatt ctcctgcctc agcctcctaa gtagctggga ttacaggcgc gtgccaccac 2475 2535 acceage has tttattttta geagagatgg ggttteactg tgttggeeag getggtegtg aactcctgad ctcaagtgat ccacccacct cagcctccca gagtgctagg attacaggcc 2595 2655 ttttgactct ttatctgag ttttattgac coctctaatt ctcttaccca gaatatttat 2715 cettcaccag caactetgac tetttgacgg gaggeetcag ttetagteet tggtetgetg gtgtcattgc tgtaggaatg accaegggce teagtttece catttgtata atgggaagee 2775 2835 tgtaccaggt cattethaag attteteetg actecagtga getggaatte taaatgetgg tctaggagct gtctccagga tggtgcagga tggctttgcg gaaaggagat gggtttggag 2895 2955 gccaacaaac ctgcttgtca atattgcctt tgcctcttgg cagcccttga acttgagtaa ataacaactc cctgaacctc agtttcctca tctgcagaat ggggataatt atgtcccagg 3015 ggtatattta gaccctgttt cottcagga gggtccccag ctggtccagg gcctgggaaa 3075 tttctactta tcctcattac ccaggtccct cctttggacc ctgtaaaggg tcagggtgaa 3135 3195 tcagatgggg gactgagcaa gtagckatga ctgcagatca tgtaaggaag ggactgacaa 3255 gaageteeca gatgetgggg agaatgaaga getaaaatag ateetaggtg etggatgett tgtcatccat gcgtgcacat atgggtgctg gcagagcccc caaggactct ggcctctcga 3315 3375 gttctcctat cttctccatt ctagatgctt cccttgtatc cagtgatgtg ctggagctgg 3435 ctttgccaag cttgtgagag ctggttgcta cattttcagg atttttacaa gttggtaaac acagccatta taaaaaatta aatgatttaa atttataatt aagtaaatta cattaaaaca 3495 aaaaaattat actcaaaatt cattacttaa ttttactacc tgttactatt atctgtgctt 3555 3615 ttgaggctat ttctacatag taactcttat ggagacatag gggagacacc gcgcatctct 3675 teetgattee eeacteaatg acateatgtt agtetttggt tgettaaetg getgtgggga gtgtttttgt atcacaaaga ttagagagga ctacacatca\gggcttgatt tattgtttgt 3735 tgattttcta gacttcagaa catgctggat aaaatgtcag taatgcaaat taaactttaa 3795 3855 agtatgtett gtttgtagee aatacatggt gtatageace aaaaqatgga gggattatte ttccagtagt tgaacactgt catccgtttc agctgacagc tgctcaaatc atttaagaag 3915 3975 gagttetgae atteatttte attgttttae ttttgtette etcaetagig taaacaaaaa 4035 tttcaaccag cattcatgcc gaacctatac ccattcttca gtgcctagct gtacagttat cagggatttt tattcgtagt ctaattttgt caaatcatgg ccaaatcgca glogatagttg 4095 4155 actttggata caaggtttgg caaaaaaaaa aatattaaca aaatattctg taagaatcaa ttggctatat ggaatttagg ataaagaata tttacaataa agaatattta caataaagag 4215 tttattatta tttgtaagtt gtgtgcaaca aacataccct ttatctctgt aaaatttata 4275 cacacaaaaa ttaacaaaag attctgtaag aattaattgg ctatatggaa tttaggata 4335

4395

<210>

<211> 541

<212> PRT

<213> Homo sapiens

<400> 2

Met Gly His Ser Pro Pro Val Leu Pro Leu Cys Ala Ser Val Ser Leu

1 10 15

Leu Gly Gly Leu Thr Phe Gly Tyr Glu Leu Ala Val Ile Ser Gly Ala
20 25 30

Leu Leu Pro Leu Gln Leu Asp Phe Gly Leu Ser Cys Leu Glu Gln Glu
35 40 45

Phe Leu Val Gly Ser Leu Leu Gly Ala Leu Leu Ala Ser Leu Val
50 60

Gly Gly Phe Leu Ile Asp Cys Tryr Gly Arg Lys Gln Ala Ile Leu Gly
65 70 75 80

Ser Asn Leu Val Leu Leu Ala Gly Ser Leu Thr Leu Gly Leu Ala Gly 85 90 95

Ser Leu Ala Trp Leu Val Leu Gly Ard Ala Val Val Gly Phe Ala Ile
100 105 110

Ser Leu Ser Ser Met Ala Cys Cys Ile Tyr Val Ser Glu Leu Val Gly
115 120 125

Pro Arg Gln Arg Gly Val Leu Val Ser Leu Tyr Glu Ala Gly Ile Thr
130 135 140

Val Gly Ile Leu Leu Ser Tyr Ala Leu Asn Tyr Ala Leu Ala Gly Thr
145 150 155 160

Pro Trp Gly Trp Arg His Met Phe Gly Trp Ala Tr Ala Pro Ala Val

Leu Gln Ser Leu Ser Leu Leu Phe Leu Pro Ala Gly Thr Asp Glu Thr

Ala Thr His Lys Asp Leu Ile Pro Leu Gln Gly Gly Gld Ala Pro Lys
195 200 205

Leu Gly Pro Gly Arg Pro Arg Tyr Ser Phe Leu Asp Leu Phe Arg Ala 210 215 220

Arg Asp Ash Met Arg Gly Arg Thr Thr Val Gly Leu Gly Leu Val Leu 225 230 235 240

Phe Gln Gln Leb Thr Gly Gln Pro Asn Val Leu Cys Tyr Ala Ser Thr 245 250 255

Ile Phe Ser Ser Val Gly Phe His Gly Gly Ser Ser Ala Val Leu Ala
260 265 270

Ser Val Gly Leu Gly Ala\Val Lys Val Ala Ala Thr Leu Thr Ala Met
275 280 285

Gly Leu Val Asp Arg Ala Gly Arg Arg Ala Leu Leu Leu Ala Gly Cys
290 295 300

Ala Leu Met Ala Leu Ser Val Ser Gly Ile Gly Leu Val Ser Phe Ala 305 310 315 320

Val Pro Met Asp Ser Gly Pro Ser tys Leu Ala Val Pro Asn Ala Thr
325 330 335

Gly Gln Thr Gly Leu Pro Gly Asp Set Gly Leu Leu Gln Asp Ser Ser 340 345 350

Leu Pro Pro Ile Pro Arg Thr Asn Glu Asp Gln Arg Glu Pro Ile Leu
355 360 365

Ser Thr Ala Lys Lys Thr Lys Pro His Pro\Arg Ser Gly Asp Pro Ser 370 380

Ala Pro Pro Arg Leu Ala Leu Ser Ser Ala Leu Pro Gly Pro Pro Leu 385 390 395 400

Pro Ala Arg Gly His Ala Leu Leu Arg Trp Thr Ala Leu Leu Cys Leu 405 410 415

Met Val Phe Val Ser Ala Phe Ser Phe Gly Phe Gly Pro Val Thr Trp
420 425 430

Leu Val Leu Ser Glu Ile Tyr Pro Val Glu Ile Arg Gly Arg Ala Phe
435
440
445

Ala Phe Cys Asn Ser Phe Asn Trp Ala Ala Asn Leu Phe II Ser Leu 450 455 460

Ser Phe Leu Asp Leu Ile Gly Thr Ile Gly Leu Ser Trp Thr Phe Leu 465 470 475 480





Leu Tyr Gly Leu Thr Ala Val Leu Gly Leu Gly Phe Ile Tyr Leu Phe 485 490 495

Val Pro Glu Thr Lys Gly Gln Ser Leu Ala Glu Ile Asp Gln Gln Phe 500 505 510

Gln Lys Arg Arg Phe Thr Leu Ser Phe Gly His Arg Gln Asn Ser Thr 515 520 525

Gly Ile Pro Tyr Ser Arg Ile Glu Ile Ser Ala Ala Ser 530 540

<210> 3

<211> 20

<212> DNA

<213> Artificial/Unknown

<220>

<221> misc_feature

<222> (1)..(20)

<223> Oligonucleotide that hybridizes to GLUT10 DNA

<400> 3
ggcacctctt ccctgcaaag

20

<210> 4

<211> 20

<212> DNA

<213> Artificial/Unknown

<220>

<221> misc_feature

<222> (1)..(20)

<223> Oligonucleotide that hybridizes to GLUT10 DNA

<400> 4 ccctcccgcg cgcagcgccg

<210> 5 <211> 18 <212> DNA <213> Artificial/Unknown <220> <221> misc_feature <222> (1)..(18) <223> Oligonucleotide that hybridizes to GLUT10 DNA <400> 5 18 cgtcccgcct ccaggcct <210> 6 <211> 17 <212> DNA <213> Artificial/Unknown <220> <221> misc_feature <222> (1)..(17) <223> Oligonucleotide that hybridizes to GLUT10 DNA <400> 6 17 ccatggcgag cgggact <210> 7 <211> 18 <212> DNA <213> Artificial/Unknown <220> <221> misc_feature <222> (1)..(18)

<212> DNA





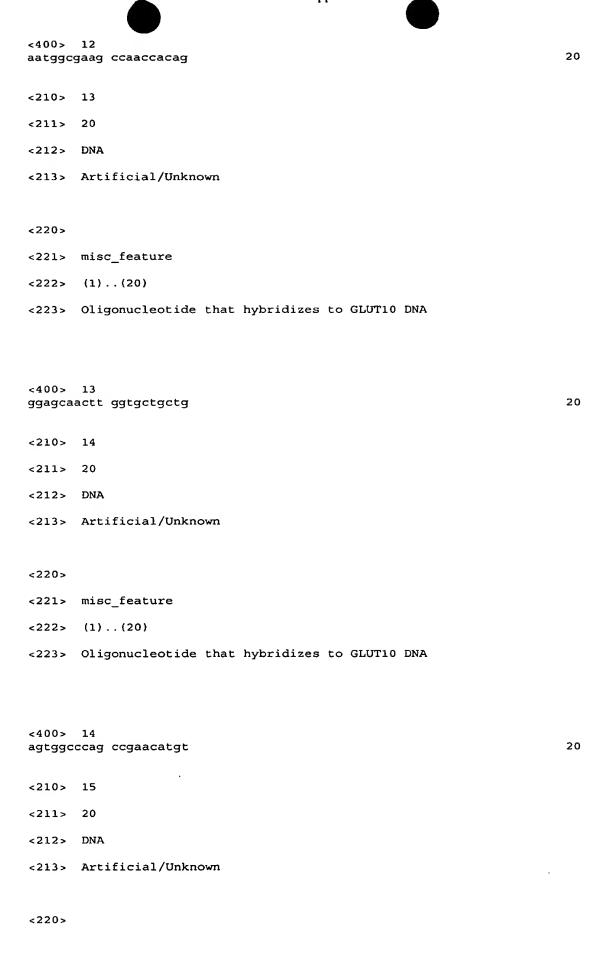
<223> Oligonucleotide that hybridizes to GLUT10 DNA

400> gtccc	7 gcct ccaggcct	18
:210>	8	
211>	19	
212>	DNA	
213>	Artificial/Unknown	
220>		
221>	misc_feature	
222>	(1)(19)	
223>	Oligonucleotide that hybridizes to GLUT10 DNA	
:400> gcggt	8 gtct acaccctgg	19
210>		
211>	21	
	DNA	
213>	Artificial/Unknown	
:220>		
	misc feature	
	(1) (21)	
	Oligonucleotide that hybridizes to GLUT10 DNA	
:400> .gacag:	9 atgg agggaaggtt g	21
210>	10	
211>	19	

<222> (1)..(20)

<223> Oligonucleotide that hybridizes to GLUT10 DNA

<213> Artificial/Unknown <220> <221> misc_feature <222> (1)..(19) <223> Oligonucleotide that hybridizes to GLUT10 DNA <400> 10 19 aggagcaggc tgcccacca <210> 11 <211> 20 <212> DNA <213> Artificial/Unknown <220> <221> misc_feature <222> (1)..(20) <223> Oligonucleotide that hybridizes to GLUT10 DNA <400> 11 ctggcagtca tatcaggtgc 20 <210> 12 <211> 20 <212> DNA <213> Artificial/Unknown <220> <221> misc_feature





<221> misc_feature

<222> (1)..(20)

<223> Oligonucleotide that hybridizes to GLUT10 DNA

<400> 15 ctcaactatg cactggctgg

20

<210> 16

<211> 20

<212> DNA

<213> Artificial/Unknown

<220>

<221> misc_feature

<222> (1)..(20)

<223> Oligonucleotide that hybridizes to GLUT10 DNA

<400> 16 cggagctgaa gatggtggag

20

<210> 17

<211> 21

<212> DNA

<213> Artificial/Unknown

<220>

<221> misc_feature

<222> (1)..(21)

<223> Oligonucleotide that hybridizes to GLUT10 DNA

<400> 17 ctcttccagc aactaacagg g

21

<210> 18

```
<211> 20
<212> DNA
<213> Artificial/Unknown
<220>
<221> misc_feature
<222> (1)..(20)
<223> Oligonucleotide that hybridizes to GLUT10 DNA
<400> 18
                                                                     20
agettgggcc tgagtccatg
<210> 19
<211> 20
<212> DNA
<213> Artificial/Unknown
<220>
<221> misc_feature
<222> (1)..(20)
<223> Oligonucleotide that hybridizes to GLUT10 DNA
<400> 19
                                                                     20
agtggcatag gcctcgtcag
<210> 20
<211> 21
<212> DNA
<213> Artificial/Unknown
<220>
<221> misc_feature
<222> (1)..(21)
<223> Oligonucleotide that hybridizes to GLUT10 DNA
```

<400> agaagt	20 ctcc agagtcacct g	21
<210>	21	
<211>	21	
<212>	DNA	
<213>	Artificial/Unknown	
<220>		
<221>	misc_feature	
<222>	(1)(21)	
<223>	Oligonucleotide that hybridizes to GLUT10 DNA	
<400> ggctgc	21 atgt ttgacctgat g	21
<210>	22	
<211>	21	
<212>	DNA	
<213>	Artificial/Unknown	
<220>		
<221>	misc_feature	
<222>	(1)(21)	
<223>	Oligonucleotide that hybridizes to GLUT10 DNA	
<400>	22	
gcttta	gagt agggagcttg g	21
<210>	23	
<211>	21	
<212>	DNA	
<213>	Artificial/Unknown	





<220>	<u>.</u>
<221>	misc_feature
<222>	(1)(21)
<223>	Oligonucleotide that hybridizes to GLUT10 DNA
<400> tgacct	23 agaa cctaccagtt g
<210>	24
<211>	20
<212>	DNA
<213>	Artificial/Unknown
<220>	
<221>	misc_feature
<222>	(1)(20)
<223>	Oligonucleotide that hybridizes to GLUT10 DNA
<400> tcctqa	24 agct gtgtgcttgg
_	
<210>	25
<211>	19
<212>	DNA
<213>	Artificial/Unknown
<220>	
<221>	misc_feature
<222>	(1)(19)

<223> Oligonucleotide that hybridizes to GLUT10 DNA

<400> 25 gggaacccca gtggaaggt 20

21

<221>

misc_feature

26 <211 20 <212> DNA Artificial/Unknown <213> <220> <221> misd_feature (1).(20)<222> Oligohucleotide that hybridizes to GLUT10 DNA <223> <400> 26 caggcagacg gat cctcag <210> 27 <211> 19 <212> DNA <213> Artificial/Unknown <220> <221> misc_feature (1)..(19) <222> Oligonucleotide that hybridizes to GLUT10 DNA <223> <400> 27 aactccactg gcatcccgt <210> 28 <211> <212> DNA <213> Artificial/Unkrown <220>

20 19 <222>\(1)..(20)

<223> Oligonucleotide that hybridizes to GLUT10 DNA

<400> 28 catgaaacta gatoctcaag

20